

ABSTRACT

METHOD AND APPARATUS FOR PROVIDING PACKET BASED AND DISTRIBUTED xDSL COMMUNICATIONS

A method and apparatus for providing digital subscriber line (xDSL) communications
5 between analog front ends (AFEs) and one or more digital signal processors (DSPs).

The present invention provides a signal processing architecture that supports scalability of CO resources, and allows a more flexible hardware response to the evolving xDSL standards and the problems associated with providing hardware to handle each new standard.

In an embodiment of the invention an apparatus and associated method for a packet
10 based system operable to process subscriber line communications effectuable between at least one digital signal processor (DSP) and a plurality of analog front ends (AFEs) each coupled to at least one corresponding subscriber line is disclosed. The apparatus allows the transport of a corresponding channel of data between a subscriber coupled to a corresponding subscriber line and the DSP. The apparatus includes a bus for the transport
15 of digital data, a DSP I/O interface and a plurality of AFE I/O interfaces. The DSP I/O interfaces couple the DSP to said bus. The DSP I/O interface for accepting a plurality of downstream channels of digital data from the DSP and for transmitting packets each associated with a portion of a corresponding one of said downstream channels to said bus. Each of said packets includes indicia of a targeted one among the AFEs coupled to a selected one of the subscriber lines for the transport of said packet to the subscriber. The plurality of AFE I/O interfaces each couple an associated one of the plurality of AFEs to said bus. Each of said plurality of AFE I/O interfaces for transmitting selected ones among said packets in which the indicia corresponds to that of the associated one of the plurality
20 of AFEs to the selected one of the subscriber lines for the transport of said packet to the subscriber.
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